

KHAN, M.A., B.A. SU LA & D.P. ZUTSHI (1978): A new crustacean for India, *Geobios*, 5: 81.

MICHAEL, R.G. & B.K. SHARMA (1988): Fauna of India: Cladocera, Zoological Survey of India, Calcutta, p. 262.

SIEH-CHIH, C. & DU NAN-SHAN (1979): Fauna Sinica,

Crustacea, Freshwater Cladocera, Science Press, Academia Sinica, Peking, China, 1979r p.297.

SMIRNOV, N.N. (1974): Fauna of the U.S.S.R., Crustacea, Chydoridae, Israel Program for Scientific Translations, Jerusalem, 1974, p.644.

32. INCIDENCE OF ISOPOD PARASITISM ON GOBIID FISHES

During examination of a large number of Gobiid fishes from Ennore estuary, Chennai, of the species *Glossogobius giuris* (Ham.) *G. biocellatus* (Val.) and *Oligolepis acutipinnis* (Val.), the presence of isopod parasites inside the mouth was commonly observed. Among these fishes the parasites were more frequently observed in *Glossogobius giuris*. Further, *G. giuris* collected from Ashtamudi lake in Kerala were also observed to harbour these isopod parasites in the buccal region. In all these gobiids, the isopods were found on the tongue. On examination, most of the parasites were intact, some with fully developed eggs in a brood pouch. These isopods resemble *Agarna* sp. Similar observations have also been made in the buccal cavity of *Hyporhamphus limbatus* (Val.), where the isopod was observed in a depression in the lower jaw.

Cymothoid isopods are reported to occur on the external surface, buccal cavity and gills of fishes (Hutchinson 1967). Their occurrence in the mouth region has been recorded earlier by Anato *et al.* (1991) in *Boops boops* from the Gulf of Tunis. The following species of isopods, namely *Meinertia oestroides* and *M. parallela* were observed in this fish.

Earlier reports on isopod parasitism on fishes in Indian waters refer to their occurrence only in the branchial chamber. To cite a few, Tiwari (1953) reported a new species of the rare cymothoid genus *Agarna*, parasitic on the clupeoid fish *Nematalosa nasus* in the Bay of Bengal. A number of parasitised fishes examined by him revealed that each fish had

only one parasite, either in the right or the left branchial chamber. Those parasites which inhabited the right branchial chamber were dextrally asymmetrical, while those which were obtained from the left branchial cavity were sinistrally asymmetrical. Except for the depression formed on the upper part of the branchial cavity, there did not appear to be any visible effect of the presence of the parasite on the host. The operculum did not show any bulging and the legs, though prehensile, seemed to play no part in the attachment of the parasite to the host. Once the parasite entered the branchial cavity of the host and grew, it could not possibly escape, as it was too big to wriggle out through the narrow gill slit. Seshagiri Rao (1974) reported the incidence of isopod parasite *Nerocila* sp. on *Ilisha melastoma*, the site of infection being the gill chamber, and he observed that this parasite is host specific. He (Rao, 1981) further analysed the incidence of Cymothoan parasites on white sardine, *Escualosa thoracata* from the east and west coasts of India. The site of infection was usually under the gill covers and rarely in the pharynx. Contrary to the observation of Tiwari (1953), Seshagiri Rao (*op. cit.*) observed that the presence of the parasite results in shrinkage of the single functional gonad which adversely affects the fecundity. The infected fishes were thin compared to the normal specimens of the same length, indicating that the parasite has an adverse effect on the growth of the host.

All these observations report isopod parasitism in the gill region of clupeoid fishes

only. Their occurrence on gobiid fishes has not been reported earlier. Hence, this is the first such report. Incidentally, these isopods are always found on the tongue and they are positioned in such a way inside the host's mouth that their head faces the opening of the mouth.

ACKNOWLEDGEMENTS

We are grateful to the Director, Zoological

Survey of India (ZSI) and to the Officer-in-Charge, Southern Regional Station, for providing research facilities. We thank Dr. A.G.K. Menon, Emeritus Scientist and Dr. P.T. Cherian, Officer-in-Charge for critically reviewing the manuscript.

July 6, 1996

M.B. RAGHUNATHAN
K. REMA DEVI

Zoological Survey of India,
Southern Regional Station, Chennai.

REFERENCES

- ANATO, V.B., M.H. KTARI & C.H. DOSSOU (1991): La parasitofaune Metazoire de *Boops boops* (Linne, 1758), poisson Teleosteen Sparidae des cotes Tunisiennes. *Oebalia*, 17: 259-266.
- HUTCHINSON, G.E. (1967): *A Treatise on Limnology*. Vol. II. John Wiley & Sons, USA.
- SESHAGIRI RAO, B.V. (1974): Observations on the host specificity of isopod parasite *Nerocila* sp. from Andhra coast. *Curr. Sci.*, 43 (13): 428.
- SESHAGIRI RAO, B.V. (1981): Incidence of a Cymathoan parasite on white sardine. *Geobios*, 8: 228-229.
- TIWARI, K.K. (1953): On a new species of the rare Cymothoid genus *Agarna* Schi. & Mein., parasitic on the clupeid fish *Nematalosa nasus* (Bl.) in the Bay of Bengal. *Rec. Ind. Mus.* 50: 295-300.

33. OCCURRENCE OF *ALONELLA NANA* (BAIRD) AND *BOSMINA LONGIROSTRIS* (O.F. MULLER,) (CRUSTACEA: CLADOCERA) IN SIKKIM LAKES

(With two text-figures)

While studying the zooplankton of Sikkim lakes *Alonella nana* (Baird 1834) a chydorid cladoceran and a male of *Bosmina longirostris* (O.F. Muller 1776) hitherto unrecorded in northeast India were collected from Sumdung lake and Nagi upper dam respectively. Brief descriptions of both the species are given below.

Order : Cladocera
Family : Chydoridae
Subfamily : Chydorinae

Alonella nana (Baird, 1834)

Material Examined: Seven females collected from Sumdung lake, Sikkim on 29.xi.1995, coll. B.N. Roy.

Female: Body size 0.289 mm, height 0.187 mm. Shape oval in outline. Dorsal margin smoothly convex. Posteroventral corner of valve with one or two denticles. Carapace with prominent lines directed anteroventrally and posterodorsally. Plate of labrum with pointed apex. Ocellus half the size of the eye situated nearer to the eye than to the apex of rostrum. Postabdomen with 5-6 anal spines. Claw with two basal spines.

Remarks: Brehm (1936) first recorded this species from Kashmir. After him Dr. S. Bhattacharya collected this species in Shillong (Michael and Sharma 1988). Other than India, this species was also recorded from the Holarctic region, European USSR to lake Baikal area. The